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THE OBSTETRIC FORCEPS AS A TIME-SAVER.¹

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ABOUT twenty-five years ago Professor Simpson, of Edinburgh, asserted that "the mortality attendant upon parturition increases in a ratio progressive with the increased duration of the labor."

In 1829, Dr. John Beatty, of Dublin, having then attended more than five thousand labors in private practice, gave this testimony: "With respect to the ill effects said to follow the use of the forceps, I am bold to say that though I have read and heard of such, I have never witnessed any, when the instrument was used in time, or with proper discrimination and dexterity, and when the patient was not already too much exhausted; and from the success that has attended the use of the forceps in my hands, I might also assert that no unpleasant consequences can occur, provided the proper time be selected."

To look into the truth of these two propositions, and to study the results of combining them, are the objects of this brief paper.

The law proclaimed by Simpson was reached by analyzing the reports given by Dr. Collins of nearly sixteen thousand deliveries in the Dublin Lying-in Hospital. When these cases were tabulated according to the length of the labor, it at once appeared that the death-rate was lowest in the column of shortest labors, and that it steadily increased until its maximum was reached in the longest ones.

Ten years afterwards Mr. Harper made similar use of Johnston and Sinclair's reports of later cases in the same hospital, but treating only the *natural* labors, about twelve thousand in number. His results are to be found in the first volume of the Transactions of the London Obstetrical Society, and in their briefest form are as follows: —

Length of Labor.	Maternal Deaths.	Still-Births.
6 hours or under	1 in 470	1 in 71
7 to 12 hours	1 in 214	1 in 64
13 to 24 hours	1 in 145	1 in 31
Above 24 hours	1 in 21	1 in 5

It should be said that in forming this table the maternal deaths from

¹ Read at the Annual Meeting of the Massachusetts Medical Society.

non-puerperal causes have not been counted. It happens, however, that the general results are the same if we reckon *all* the deaths among the mothers.

"These results," Mr. Harper says, "are drawn from all those labors which are perfectly natural and uncomplicated with any secondary peculiarity which would modify or in any way alter their character. None of them were instrumental, but all were begun and finished by natural efforts alone. All foot, breech, arm, and placental presentations, as well as forceps and craniotomy cases, are thus excluded; the main object being to prove that mere duration alone, without any additional or abnormal circumstance, is the great element in rendering labor dangerous." "In proportion to increased duration is there a rapidly increasing rate of danger and mortality," to both mothers and children.

The deduction made by Simpson and Harper seems to be well drawn, since all of the cases were sufficiently alike to be compared, and were exposed to identical influences, — length of labor being, so far as we can see, the one condition which varied.

However true this law, it is of little use to us without an essential qualification which Simpson seems to have overlooked. In the words of Churchill, "delay in the first stage" (up to the passage of the head through the os uteri), "involves *per se* very little if any danger, no matter how tedious it may be; but delay in the second stage, beyond a comparatively short time, is always of serious import." This point is agreed upon by obstetric authorities, and needs no discussion.

Then Simpson's law of the relation between time and the death-rate applies especially to the second stage of labor: therefore, after the os is dilated, and the head begins to descend, it is our duty to save all the time we can, in order to lessen the danger.

The obstetric forceps being the most efficient means of shortening this second stage of labor, we have next to see whether or not it is a *safe* instrument, in order to learn whether we may properly use it to lessen danger by saving time.

In opposition to Dr. Beatty's very favorable testimony already quoted, listen to his contemporary, Dr. Clarke, an equally famous obstetrician: "It is certain that a labor really tedious under the best management is not without danger both to mother and child. I am, however, fully convinced that this danger is seldom lessened by the common expedient of extracting instruments" (meaning forceps). "Cases of convulsions excepted, I have rarely had reason to be pleased with the effects of extracting instruments, and not unfrequently have I had much reason to deprecate their evil consequences."

Here are two representative opinions, as wide apart as they well can be; without doubt they are both well founded. The simple fact is, that

these eminent men had in view two distinct operations, the early and the late application of the forceps, — operations so different in their nature and results that just estimates of them must widely differ. Dr. Clarke used the forceps only after hours of delay, or even impaction, as the last resource which left the child a chance of living; the mischief which he and plenty more have found to follow such forceps deliveries is ascribed by them to the instrument rather than to the conditions which the instrument relieved. You will observe that the only reservation in Dr. Clarke's sweeping condemnation is in cases of convulsions, when the early operation was forced upon him.

Dr. Beatty, who used his forceps to prevent the evils of delay, found it a harmless instrument. To use his own language once more: "In no instance of the one hundred and eleven cases did any unpleasant result follow; none of the mothers died, none of them had the perinæum lacerated, nor any of those evils which are set forth as the effects of the forceps; and still more, all of the children that we had reason to think were alive at the commencement, were born living, and none of the whole number had any injury or mark whatever inflicted by the instrument."

This must be allowed to be strong evidence as to the harmlessness of the forceps when used early, before the mother's strength is exhausted, and especially before the soft parts have become swollen and devitalized by long pressure.

So far as I know, all the testimony against the forceps comes from those who have used them late; while all who report the results of the early operation agree in substance with Dr. Beatty.

Dr. Churchill's treatment of this subject is somewhat curious: having collected statistics of forceps operations from every available source, he shows that they have, on the whole, been attended with decidedly less mortality than is found in tedious labors left to nature; and he goes on to point out the obvious fact, that those who have used the forceps most freely have saved the most lives. In his own mild words, "to those who, like myself, regard the wider employment of the forceps as the best mode of diminishing the frequency of the employment of craniotomy, it is a matter of rejoicing to find this instrument increasingly employed, and that with each enlargement of our statistics the death-rate for mother and child has diminished." As he had already shown the danger of delay in the second stage of labor, it seems strange enough for so acute a writer to forthwith lay down the rule, that "in no case is the forceps to be applied until we are perfectly satisfied that the obstacle cannot be overcome by the natural powers with safety to the mother and child;" which is practically the same as to say, "run the risks of tedious labor rather than the lesser risks of the forceps."

It seems to me that Dr. Churchill's premises logically lead to this

very different conclusion: *the presumption is decidedly in favor of the early and frequent use of the forceps.*

Just how early or how often the instrument may be most successfully used can only be learned by studying the results of practice based upon this presumption.

Here we are indebted to Dr. Hamilton, of Falkirk, who has published his views and experience in various journals, particularly in the *Medico-Chirurgical Review* for April, 1853, and October, 1871, and in the *Edinburgh Medical Journal* for May, 1855, and October, 1861. The distinctive features of his practice are, to interfere very little until the os is well dilated; to make sure that the anterior lip of the uterus is not pushed down by the advancing head; then if the labor is not over within two hours, to deliver by the forceps.

The results which he reports are in brief these: the forceps were used in one seventh of the cases; the death-rate among the children was small beyond all precedent; for instance, he tells us of one series of seven hundred and thirty-one successive births of living children; the maternal mortality is nowhere definitely stated, but is said to be "very satisfactory." During thirty years he had not once to use the catheter in his own midwifery practice. He found the parts of the mother never to be more injured than in an easy, natural labor; rupture of the perinæum never once occurred in his whole experience, which in this respect is so unlike that reported by most good authorities as to throw a shade of doubt, not upon his honesty, but upon the accuracy of his observation; but this is a point concerning which error and oversight are easy and common. I am aware of no other published statistics of cases treated as his were, and this is my excuse for bringing before you a very short analysis of the last three hundred cases of head presentation occurring under my own care.

There were three hundred and one children, all born alive but four; of these one was believed to be dead when labor set in; one was a monstrosity, and one owed its death to prolapse of the cord. One child, born a month too soon, died in twelve hours; the remaining two hundred and ninety-six lived at least a week. In the last one hundred and thirty-eight cases there have been no still-births.

Three of the mothers died; one of them was at the point of death when first seen, probably from pulmonary thrombosis, and the child being nearly born was safely extracted at the very moment its mother died; another had erysipelas when labor set in, and died of blood-poisoning; the third was apparently exhausted by a very long first stage in which no interference was permitted; by the time the os was dilated she was in high fever. There have been no deaths in the one hundred and seventy-nine women last delivered. While it is true that the forceps was used in all three fatal cases, I see no reason to think that the operation affected the result in either of them.

After delivery the perinæum was always examined, and in but one case, which by the way was not instrumental, was there found sufficient tearing to need a stitch.

Almost all of these three hundred labors were completed within two hours after dilatation of the os; and to secure this end the forceps were used fifty-one times, once in six cases.

The application of the instrument rarely gave any more pain than the previous digital examination, and never required anæsthesia.

The catheter was not once required either during or after the confinement.

These statistics, as you will observe, are based upon the arbitrary limit of two hours for the second stage of labor; if a *standard* limit is ever found, it will only be through the study of many such reports. Meanwhile one result should not be overlooked, — the great and obvious saving of suffering and anxiety to the parturient woman and all about her.

I have tried to give you an outline sketch of the facts which go to show, first, that lapse of time in the second stage of labor brings increasing danger; second, that the forceps are not necessarily a dangerous instrument; and finally, that the experience of those who have used the forceps freely, to save time and avoid danger, is by no means unsatisfactory.

My purpose has been not so much to convince as to stimulate to thought and study upon an important practical question, and I have not hesitated to pass over many points of interest and importance for the sake of brevity and of keeping the main question clearly in view. Should it happen that a single hearer is led by this essay to use his forceps oftener than he did before, I should regret the fact without feeling any responsibility for it, since no man has a right to form or change his views upon a weighty matter without a much more thorough consideration than is possible within the limits of such a paper. A man so easily turned is by nature unfit for the practice of medicine, least of all fit for midwifery, which demands a well-stored and steadfast mind in a healthy and serviceable body, and above and ruling them both, a lively conscience; a conscience that never allows him to approach a woman in childbed without the feeling that two lives are trusted in his hands; a conscience that keeps this sense of responsibility always so close to him that there is no room for small and selfish motives to enter.

Conscience should hold us never more firmly than when we decide upon the use of a powerful instrument or remedy; we cannot shirk responsibilities for misusing it through carelessness or ignorance; neither are we blameless if we fear its power and fail to use it in the hour of need.

THE CLIMATE AND WEATHER OF NORTH AMERICA.

BY DR. JOHANN DAVID SCHOEPPF,

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TRANSLATED AND EDITED BY JAMES R. CHADWICK, M. D., OF BOSTON.

NEW YORK, December 20, 1780.

I REGRET not having seen the southern colonies, yet I am satisfied that in this part of the country and in the middle colonies there is field enough for new observations. The few Europeans who have traveled through these regions have, I hope, not been so impolite as to leave nothing for their successors, — and against discoveries on the part of the native-born Americans we are assured for many years to come. Making money and procuring luxuries are still their sole aims, and the sciences are only cultivated with reference to these dominant ideas.

The first and most striking comment of all travelers, not only in the northern but also in the southern half of America, may be summed up in this statement; that all the experience as to climate and weather acquired on the three old continents cannot be in the least applied to the new one. Cold has here the upper hand. As I, however, have only had a chance to see a very insignificant portion of the whole country, — namely, that along the coast from Delaware Bay to Rhod-Eyland and a small part of the adjoining provinces of Pennsylvania, East and West Jersey, New York, Connecticut, and Rhod-Eyland, I must confine my remarks chiefly to this section.

When we were first approaching the coast of New York,¹ I foolishly flattered myself that I should find a mild, fertile, and agreeable climate, such as those countries in Europe enjoy which lie in the same latitude. I was however soon convinced that the difference between the two was very considerable. A part of the States of the Church, the northern part of Naples, the southern provinces of France and Spain, and the equally delightful countries in the East, have the same solar elevation as the above-mentioned provinces in America. But all the agreeable features, all the advantages which have earned for Italy the name of the Garden of Europe, all the delicate wines, the excellent cereals, the multitude of delicious fruits which abound under the same parallel in Europe, and even much farther to the north, are here wanting. Instead of the moderate summers and mild winters of Naples, we have here heat and cold of extraordinary severity in both seasons, and no products which can be compared with those of that region. The two Carolinas and Floridas, although the most southerly colonies and exposed to the hottest summers, experience nevertheless for a longer or shorter period every year, all the effects of a winter, often severe. These comparisons are still more striking when applied to the northern

¹ In January, 1779.

regions of America. In the latitude of 48° , 49° , and 50° , we enjoy in our fatherland a mild, temperate climate, sufficiently warm to produce good wines, cereals, and delicious fruits. A land of almost eternal ice and snow occupies the same parallels in North America. New Scotland,¹ Newfoundland, Canada, and New Britain² are as much unlike the countries lying parallel to them in Europe as winter is to summer. These provinces, as well as Labrador and the country about Hudson's Bay, are enveloped in ice and snow for rather more than half the year, so that Europeans living in the same latitude have not yet ventured to settle there. The same cereals and fruits which are cultivated in Europe far above the fiftieth degree, here cease to grow at about the fortieth degree. Wheat, for instance, hardly ripens any farther north. Albania and New England produce but little, and that of inferior quality. The author of the *Recherches Philosophiques sur les Americains* estimates the difference of warmth between the Old and New World at twelve degrees.

New York and Philadelphia languish in the summer months, often for many successive days, under a heat which, according to the sensations and testimony of travelers as well as the height of the thermometer, is as great as in the West Indies and the most southerly portions of the terra firma; it does not, however, persist so uninterruptedly and for so many months as there. Almost every summer the Fahrenheit thermometer has been observed repeatedly to stand at 95° , 96° , and 97° . At the end of June and in July, 1778, while the British army was retreating from Philadelphia to Jersey, it remained for eight successive days between 91° and 96° , and on the 28th of June, the day on which the battle near Monmouth Court House took place, the thermometer was at 96° . In Rhod-Eyland, which, owing to its exposed position on the sea, has a temperate summer, I have frequently seen the mercury in June, July, and August, between 84° and 90° ; in this last summer we had an unusually persistent drought and heat in July and August. The height of the Fahrenheit thermometer at midday in the shade was 84° , 88° , 90° , 92° , and 96° , on successive days. Uncovered and exposed to the sun it rose to 106° , 110° , 115° , etc. In the sun, but covered with a thin, black silk ribbon to prevent refraction of the sun's rays, the mercury in my thermometer filled the whole length of the glass, but this only extended to 123° . On the other hand we have seen Dr. Nooth's thermometers, which are prepared with great exactitude and are marked to above the boiling point of water, stand between 128° and 135° , and once, on the 24th of August, at 146° , when covered as above and exposed to the sun, or laid upon a stone which was warmed by the solar rays. In the night mine has stood at 79° , 82° , 88° , and 90° , during the hottest weather.

¹ Nova Scotia.² New England.

More unexpected, however, is the extreme cold of the winter when taken in connection with the latitude of the position and the heat of the summer. To judge from the variations of the weather, one would think that this stretch of territory was transported every year from under the line up to the north pole. The credulous Americans have long flattered themselves that, by the great progress of cultivation and by the destruction of the forests of the country, their climate has for some years been rendered much milder, and the severity of their winters been moderated. The past winter, however, has disappointed these premature anticipations. Few of the inhabitants can remember a similar one in respect to the severity or persistence of the cold and frost, and to the amount of the snow-fall. Even as early as the end of November and first weeks of December a steady frost set in; snow fell frequently and remained everywhere upon the ground; in ordinary winters this is not wont to occur until four to six weeks later. Back in the country such an amount fell in various snow-storms that sleighs were driven over all the fences. In January the severest cold was experienced; the North and East rivers froze so thick that loaded sleds were driven over both. All excursions towards Powles Hook, expeditions, all kinds of provisions and even twelve-pound cannon were carried to and fro upon the ice for nearly four weeks. Sleighs passed from here to Staaten-Eyland and Long-Eyland, and from one to the other of these islands. Between East Bay and Westchester people went for twenty miles upon the ice. In Philadelphia the usual oxen feast was held upon the Delaware, the river being frozen down to the bay. The position of the southern provinces protected them this time as little as ever from the inclemency of the winter. The James and York rivers, in latitude 37° , were frozen hard, and Chesapeake Bay was full of ice. The streams in Georgia and Carolina, in latitudes 32° and 33° , were covered with ice an inch thick. Instances of the extraordinary effects of cold in former years throughout the southern provinces are constantly recalled. "On February 7, 1747, it froze so hard in Charleston that two bottles, which some one had taken into bed, were found in the morning burst, and the water changed into a lump of ice. In one kitchen where a fire was kept up, the water, nevertheless, in an earthen vessel, which contained a live eel, froze to the bottom. On January 3, 1765, Mr. Bertram experienced such extraordinary cold in St. Augustine in latitude 30° , that in one night the ground along St. John's River was frozen an inch thick and all the lemon and banana trees about St. Augustine succumbed to the cold."¹ The famous winter of 1740, and perhaps a few others may, judging from the accounts and sensations of the inhabitants, be compared with this one for cold. According to observations which were taken before the war by gentlemen at the New York college, the

¹ Robertson's History of America, vol. ii., page 331.

mercury had often been seen under 6° below zero, 38° beneath the freezing point; in the last one this was a common occurrence. My thermometer only extends to zero, so that I have not been able to take any observations about the extreme fall of the mercury, though I have several times seen the tube quite empty. I doubt if so striking a contrast between heat and cold has been experienced in any other part of the inhabited globe as in this place whose climate has been so extolled by Franklin. From 13° below zero to a warmth of 96° in the shade, the difference is 109° , and to the greatest heat of the sun, 136° , amounts to 159° ; the climate of England, on the other hand, though in a northerly situation, is so tempered that the variation from the greatest heat to the greatest cold does not exceed 65° in the shade.¹

It is not enough that the extremes of heat and cold are so far apart; it is not enough that in the uninterrupted cycle of ages, the effect of one or other is reduced to nought, and that the land, which is exposed to all the discomforts of the torrid and frigid zones, yet does not enjoy the advantages of either. Rapid variations from heat to cold constantly take place every four or five days in these regions. In the north the weather appears to be somewhat more stable; yet very warm days often occur in the months of February and March, and alternate with frost and snow. It freezes in the middle of April, and often even in May. In the winter of 1789 people were brought to the hospital in Philadelphia with frozen toes, although on that day the thermometer was standing at 70° , and they were only suffering from the frost of the preceding night. We have sat with doors and windows open in February, without a fire, and yet, on the other hand, we have often been glad to have a fire in the middle of summer. On December 25, 1778, I encountered one of the most terrible northerly storms, on board a ship in the Sound. The mercury stood between 4° and 20° for a number of days, and immediately afterwards, the transition from the old to the new year brought us a most delightful spring weather of 45° – 68° . In the month of July, 1779, there followed upon great warmth so frequent rains with easterly and northeasterly gales, and such cool days, that delicate individuals had to have fires. On the 20th of last August, after a long series of hot days, we saw the thermometer suddenly fall to 63° and rise on the 24th to 92° . It is incredible what disagreeable physical sensations are produced by these sudden contrasts, not to mention the prevalent diseases. When the Russian plunges from his vapor bath immediately into the snow, or into the stream that is covered with ice, I hardly think he suffers half as much as we do from the incessant changes of the weather. On the last day of October we had quite a warm afternoon; between five and six in the evening there was thunder and lightning in the distance, and

¹ The greatest cold ever experienced in England was 15° . The greatest heat in August, 1779, was 70° . (Schoepff.)

nothing was more unexpected than to find, on the next morning, November 1st, the whole ground covered with snow to the depth of an inch, and yet at eight o'clock in the morning the mercury had already risen to 80°. If America should ever have a Thomson (thus far she has not produced even a tolerable poet), I cannot imagine which season of the year he would find it worth his while to celebrate.

The only moderately agreeable months are September and October. The charm of spring is unknown and unfelt. A steady April weather prevails through the months of March, April, and May — alternate summer and winter. Then, of a sudden, a moderate heat prevails, in the intervals of which eastern and cool northern winds remind us of the scarcely defunct winter. The vegetable kingdom comes to life several weeks later than in England and no earlier than in Germany. . . . North-westerly winds are the most common in this part of the world; they prevail during all seasons of the year and are often not spent till they have crossed the Atlantic. Upon them Columbus based his belief in the existence of a then unknown western continent. Although they often assail us in the rudest manner, and are so chilly, even in the hottest summer weather, we must yet credit them with the greatest of benefits, since they expedite the voyage to Europeans who are hastening home to their mild, civilized, and in every respect excellent fatherland. It almost seems as though the westerly gales, fogs, and mighty seas had been cast in the way of Europeans by a beneficent Providence as so many warnings to keep off. When they have been overcome, nothing is found but the gloomy shadow to the bright picture of home.

It has been calculated that land-winds prevail in North America during three fourths of the year; these expedite the return of ships to Europe, so that they make the trip in half the time required for the outward voyage. To shorten the passage from Europe it is necessary to steer far to the south, so as to reach the trade-winds. Single ships and merchantmen therefore often diverge as far as the twenty-sixth degree of southern latitude. Transports are not able to follow this course for fear of exposing the troops to the great heat, particularly when the sun is in the northern hemisphere.

It has been observed that the severest storms commonly approach on the side toward which the wind is blowing [to leeward]; a north-west storm, for instance, breaks out a day earlier in Virginia than in Boston. The cause of this is apparent, for if the atmosphere in the south becomes rarefied for any reason, the denser air will at once move from the adjacent regions in that direction; an influx from the north is thus gradually set up.

Besides these winds, there exist along the coast of North America during the hot days, the so-called sea-breezes. They do not penetrate

for any distance inland; Philadelphia, which lies far from the sea, is never reached by them, so that the heat is heavy and oppressive; Boston, at the head of a deep bay, feels them but little. New York is, in a manner, sheltered from them by the heights of Long and Staaten eylands, yet they seldom fail to reach the city with the flood-tide. Their effect is most marked in Rhod-Eyland, where, owing to its immediate propinquity to the sea, the excessive midday heat is greatly moderated. For this and other reasons this eyland is always regarded as an agreeable and healthy summer resort; people of means frequently come there from the West Indies and the southern provinces to pass the summer. The land-breezes, — which in the West Indian eylands and in most warm countries alternate with the sea-breezes and render the nights cool by blowing from the land towards the sea, — are not much felt here, at least, not invariably; they occasionally spring up toward midnight or later, and die down toward sunrise. In summer there is apt to be a calm in the morning and evening; this and the sea-breezes through the day have often detained ships for many days in the harbor of New York. Another disagreeable feature of this coast is the thick, heavy fogs which collect in the summer, produce an unpleasant, sultry weather, and are often so thick as to wet one's clothes. . . . The natives consider them to be harmless, which is true, in so far as they contain no injurious exhalations from stagnant water or marshes, but are simply sea-water disseminated in the air. . . .

It is a pet theory of the Americans that the excessive cold of their country is imparted to the wind chiefly by the snow which lies so long in their boundless forests. They base this belief upon a fallacious experience. Thus I have heard several old inhabitants assert that the cold has not been nearly so severe in recent winters as it was twenty or thirty years ago; in the interval of time very many forests have been leveled. This opinion is based only upon physical sensations, and the memory is very likely to be at fault in comparing the experiences of different years. During the war, a much greater amount of wood than usual has been cut in this neighborhood by both armies; the past winter has nevertheless been more severe than any of its predecessors; all these considerations make it very desirable that proofs should be brought forward in support of the above assertion.

RECENT PROGRESS IN MEDICAL CHEMISTRY.

BY E. S. WOOD, M. D.

Albumen and Albuminous Urines. — Occasionally the physician meets with a specimen of urine which an examination of the sediment by the microscope shows to contain renal casts, but which does not give the characteristic reactions for serum-albumen. Further investigation would, however, invariably prove the presence of some other variety of albumen. Obermüller¹ mentions certain urines which are not precipitated by nitric acid in any proportion, and yet, when these urines are treated with an excess of alcohol, an abundant precipitate is formed which consists, in part at least, of albuminous substances. This precipitate is soluble in water, and, when purified by repeated solution in water and precipitation by alcohol, behaves with reagents like peptone.

Senator² also speaks of the different varieties of albumen which may be found in the urine. The presence of these may be explained partly by their presence in the blood-serum, and the passage thence through the kidney of one or the other of them, according to circumstances, into the urine, since the different varieties act very differently with animal membranes in the presence of different proportions of inorganic salts. Another source may be the albuminous infiltration of the renal epithelium which can readily give up its albumen to the urine, and can also be itself decomposed with the setting free of a myosin-like substance.

The author examined the urine of five cases of cloudy swelling, thirteen of chronic diffused nephritis, three of acute diffused nephritis, and six of amyloid degeneration. The urine was diluted with water until it had a specific gravity of 1.002 or 1.003, and a stream of carbonic acid gas passed through it for two or more hours. This produced in every case a turbidity, but in only one case an evident precipitate. This dissolved in dilute hydrochloric acid and a solution of common salt, and had the properties of globulin. Its fibrino-plastic nature was proved by dissolving it in a trace of sodic hydrate, and adding it to pericardial or peritoneal fluid, when it produced a coagulum of fibrine. The urine of acute nephritis was richest in this paraglobulin, while in that of chronic nephritis there was very little. In the five cases of cloudy swelling a considerable amount of paraglobulin was found. The urine filtered from the paraglobulin and treated with very dilute acetic acid gave a slight turbidity, which might be due either to a trace of paraglobulin which had escaped the former process or to alkali-albuminate. To which of these it was due could not be determined on account of the small quantity; acid-albumen was never found.

¹ Centralblatt für die medicinischen Wissenschaften, 1875, No. 8, from Inaugural Dissertation. Würzburg, 1873.

² Centralblatt für die medicinischen Wissenschaften, 1875, No. 8, from Virchow's Archiv, 1874, lx. Heft 3 und 4.

In order to test the urines for peptone it was first deprived of serum-albumen by boiling with a trace of acetic acid, then mixed with three or four times its volume of alcohol, and the precipitate washed with alcohol. This precipitate, always small in amount, was soluble in water, colored yellow with nitric acid, and answered to the tests for peptone with the metallic oxides.

In five cases of chronic cystitis the author found a large amount of fibrino-plastic substance (paraglobulin) which formed a thick coagulum of fibrine when added to pericardial fluid. And in one case of croupous affection of the kidneys caused by the application of a cantharides plaster, there was a true fibrinuria.

Gerhardt¹ often observed peptone in urine which did not contain serum-albumen, sometimes as a forerunner and sometimes as a follower of ordinary albuminuria. L. Siebold² recommends in testing the urine for albumen the addition of ammonia until the urine is feebly alkaline, filtering from the phosphates and organized substances in suspension, rendering the filtrate slightly acid with acetic acid, and boiling. The slightest turbidity can be detected by comparison with a portion of the filtrate which has not been boiled.

Adamkiewicz³ gives a new test for albumen, which is very delicate, and is applicable to all the varieties of albumen, peptone included. Every variety of albumen, when dissolved in an excess of glacial acetic acid and treated with concentrated sulphuric acid, gives a beautiful violet color and a feeble fluorescence, and shows, when properly concentrated and examined by the spectroscope, an absorption band, which, like that of urobilin⁴ and choletelin, lies between the Fraunhofer lines *b* and *F*.

This test reacts with a few cubic centimetres of a solution of egg albumen which contains one part of albumen in two thousand parts of water.

Aronstein⁵ has confirmed Graham's experiments concerning the preparation of absolutely pure albumen by diffusion, the necessary precaution being that the parchment paper used must be the best English parchment. His conclusions are, 1. That pure albumen is completely soluble in water, and the presence of salts is not necessary for its solution in the animal fluids. 2. That pure albumen is not coagulated either by heat or by alcohol, and that the coagulation usually taking place on heating or adding alcohol is caused by the presence of salts. 3. That there exist no compounds of albumen with the insoluble salts in the animal fluids to which these salts owe their solubility, but that

¹ Wiener medicinische Presse, 1871.

² Chemisches Centralblatt, 1874, p. 169.

³ Berichte der deutschen chemischen Gesellschaft, 1875, No. 3.

⁴ See Report on Medical Chemistry, January 2, 1873.

⁵ Archiv für Physiologie, Bd. 8, p. 75.

they are held in solution in these fluids by means of an organic substance present both in blood-serum and white of egg, which does not belong to the class of albuminous compounds. 4. That the blood-serum and white of egg contain, besides serum-albumen, another variety which is insoluble in water, and is held in solution in the animal fluids by the crystalloid bodies present. This substance is paraglobulin, or the fibrinoplastic substance. 5. That pure serum-albumen is precipitated by ether, while pure egg-albumen is not. In the presence of inorganic salts, however, this action is reversed.

Urinary Coloring Matters. — Much progress has been made of late years in the study of the urinary pigments. The discovery by Maly of the method of formation of the pigment urobilin, found by Jaffé in normal urine, and to a greater extent in some pathological urines, has already been referred to in these reports.¹ Besides urobilin, another pure coloring matter (indigo blue) can be isolated from the urine. This according to the investigations of Schunk² and others, is obtained by the decomposition of indican which exists normally and pathologically in the urine. Jaffé,³ and later, Dr. Masson,⁴ found that the indican was very largely increased in the urine after the ingestion or subcutaneous injection of indol (a substance which can be obtained from indigo by the action of zinc and hydrochloric acid), thus showing that indican can be obtained from indol by the oxidizing action of the system.

As to the formation of the indol, the experiments of W. Kühne⁵ render it extremely probable that it is formed by pancreatic digestion of the albuminous substances. He succeeded, by distilling a mixture of an infusion of pancreas with albumen, in obtaining the milky, aqueous solution of indol, filled with the ill-defined crystalline plates. This does not prove absolutely that indol is a product of pancreatic digestion of albumen, since it may have come from the pancreatic ferment itself, or from the bacteria, which were always present during the experiments, and in some instances, when such precautions were taken as to exclude the bacteria, no indol could be found. Its formation *may*, therefore, be classed among the putrefactive changes. It is more probable, however, that the indol is a product of the decomposition of albumen, since it can be obtained from albumen by melting it with potassic hydrate. By treating caseine in the same way, a pigment was obtained apparently identical with the indigo red found by Nencki and described below.

By long warming of indican with the mineral acids, other pigments besides indigo blue can be obtained in very small amounts, namely, in-

¹ See the *Journal*, January 2, 1873.

² *Chemisches Centralblatt*, 1856, p. 60; 1857, p. 957; 1858, p. 225.

³ *Medicinisches Centralblatt*, 1870, p. 514.

⁴ *Archives de Physiologie*, November, 1874.

⁵ *Berichte der deutschen chemischen Gesellschaft*, 1875, No. 4.

digo red (Heller's urrhodin) and indigo brown. In some pathological urines these pigments are verylargely increased. M. Nencki¹ has isolated the indigo red as a red amorphous pigment from the urine of a patient with spinal paralysis, by the addition of hydrochloric acid and heat. It was soluble in alcohol and glacial acetic acid, with a beautiful violet color, and when dried and heated in a test tube gave off violet fumes.

By the ingestion of oxindol, dioxindol, or isatin (which can be obtained by oxidizing indigo) the amount of this red pigment is much increased. To obtain it from human urine, the whole amount passed during twenty-four hours after the ingestion of two grammes of isatin is collected, evaporated to one third of its original bulk, and concentrated hydrochloric acid added. The urine is colored at once deep red, gradually becomes darker, almost black, and finally, after several hours, the pigment separates in the form of microscopic dark red granules. When this is treated with hot alcohol the greater part of the pigment dissolves, giving a carmine red solution, and about one third remains undissolved. After the evaporation of the alcohol the pigment remains as a dark red powder with a metallic lustre. Hot water dissolves only traces, but it is easily soluble in hot alcohol and glacial acetic acid. It is slightly soluble in ammoniac and sodic hydrates with a brownish-red color, and readily reprecipitated by acids as a brown flocculent precipitate. The solution in alcohol and glacial acetic acid shows no absorption bands when examined with the spectroscope. If heated it sublimes, the fumes being red.

The residue, which is insoluble in alcohol, dissolves easily in ammoniac hydrate with a brownish-red color, from which solution hydrochloric acid precipitated it as a brown flocculent precipitate. When dry it forms a blackish-brown powder with a metallic lustre. It cannot be sublimed. It is insoluble in cold alcohol and glacial acetic acid, but easily soluble in the alkalies.

If indol is really the result of pancreatic digestion of albumen, the presence of indican in the urine is easily explained. The indol is absorbed from the intestine, oxidized in the blood to indigo blue, which combines grape sugar to form indican, and the indican eliminated with the urine. Nencki explains its increase pathologically by disturbance of the pancreatic digestion. The appearance of the indigo red in the urine is best explained by a part of the indol changing in the intestine to isatin.

¹ *Berichte der deutschen chemischen Gesellschaft*, 1874, No. 17.

CYCLOPÆDIA OF THE PRACTICE OF MEDICINE.¹

THE third volume of this great work is fully equal to its predecessors. Nearly one half is occupied by Bäumler's article on syphilis, and the rest is devoted to the discussion of infection by animal poisons, by Bollinger, and of diseases from migratory parasites, by Heller. Bäumler goes over the immense field with great thoroughness and impartiality. In this latter respect he deserves great praise; we have noticed no instance in which he seemed at all influenced by preconceived notions and in which he did not give full weight to the arguments of both sides. With regard to the question of unity, or duality of the syphilitic poison, the author expresses himself very plainly and adopts the simplest nomenclature. There is but one syphilitic poison, "but in another sense from that given to it in the doctrine of unity;" the chancre, chancroid, or soft chancre, being a local affection from a distinct poison. It is admitted that the two poisons may occur together, and that very anomalous cases present themselves. "When we remember the multiplicity of secretions which are often mingled together at the infecting source, there is no wonder that in practice, syphilitic infection does not preserve the pure and simple character which is observed in pathological experiments." The question of prophylaxis by sanitary legislation is naturally not considered at length, but the few pages given it are good and suggestive. Bäumler expresses himself strongly in favor of the rational use of mercury, and says that syphilization, which he shows to be a bad name, "is not likely to obtain the confidence of physicians to any extent."

Bollinger discusses hydrophobia at great length and in a very interesting manner. He gives many valuable statistics on various points. Though the advisability is well known, we may be pardoned for calling attention to the statistics showing the great advantage of cauterizing every bite that can reasonably be deemed suspicious. The author endeavors to determine the diagnosis of rabies in dogs, which he tells us, "with few exceptions, may be correctly established by a study of the clinical and anatomical appearances taken together." It is pretty clear, however, owing to the many troubles that may cause symptoms simulating hydrophobia, that its diagnosis during life must often be impossible. In many cases it may be important to decide this question after the death of an animal concerning whose clinical history we have no reliable data, who may for instance have been shot on the vaguest suspicions. In such cases the author expresses his agreement with Bruckmüller, that "it will be best to pronounce every dog free from the disease, provided his stomach contain normal ingesta and his small intestine contain chyme."

As for the treatment of this hopeless disease, Bollinger put narcotics first, and chloroform at their head. As euthanasia is all we can aim at, we think he is quite right in giving the most dangerous anæsthetic the preference.

On reading the chapter on snake-bites we cannot but feel that more might have been said of the rattlesnake, considering its wide-spread distribution in

¹ *Cyclopædia of the Practice of Medicine*. Edited by DR. H. VON ZIEMSEN. Vol. III. Chronic Infectious Diseases. American Edition, edited by ALBERT H. BUCK, M. D. New York: Wm. Wood & Co. 1875. Pp. 672.

America. As to treatment, besides the ordinary measures for destroying the poison or of hindering its absorption, we find that Bollinger advises that the patient "should be made to drink copiously and frequently of spirituous liquors diluted with hot water, taking care, however, not to produce intoxication." We have no experience in these parts, but we understand that the essence of the "whiskey cure," which is very efficacious in the South and West, is that the patient should drink as long as he can carry his glass to his mouth. Heller's paper on migratory parasites is very comprehensive and interesting.

CHAMBERS ON DIET IN HEALTH AND DISEASE.¹

THIS book, like all those written by this well-known author, is distinguished by a vivacious and more familiar style than the ordinary text-books. It is also characterized by an originality and keenness of observation for which Dr. Chambers is so justly celebrated. Oftentimes, perhaps, the reader may be startled by some suggestions, as for instance that on page 191: "It is a strange thing, and one which at first sounds paradoxical, that the supply of the stomach, even from the substance of the individual body itself, should tend to prolong life. A case of starvation for twenty-two days in an open boat was recorded in the periodical prints last spring (April 30, and May 1, 1874), in which the poor victims fought in their delirium, and one was severely wounded. As the blood gushed out, he lapped it up; and instead of suffering the fatal weakness which might have been expected from the hæmorrhage, he seems to have done well. . . . M. Anselmier fed dogs on the blood taken from their own veins daily, and he found that the fatal cooling incident to starvation was thus postponed. . . . The prolongation of life without provisions is by no means a mere speculative discussion. Were I in such a strait as above referred to, my reason would counsel me, and I hope I should have the courage, to wound the veins and suck the blood." And again, when speaking of sea-sickness incident to short voyages on the sea, on page 174: "If the voyage is by night and sufficiently long to make a night's rest of say seven or eight hours at least, it is worth while to swallow a full dose of chloral on embarking, and to sleep through one's troubles."

The general design of the work, however, to "connect food and drink with the daily current of social life," is well carried out. The explanation of the theories of dietetics might perhaps be modified if viewed in the light obtained from recent physiological theories; as for example, the practitioner observes that (page 19) "under vegetable food the saliva becomes more copious, under meat there is more gastric juice." The physiologist might go farther and theorize that the *continued* use of vegetable food produces *diastase* (saliva), or the peculiar ferment necessary to prepare vegetable food for digestion; whereas the continued use of meat will produce *gasterase* (the gastric juice), which is also essential for the preparation of animal food for digestion. The

¹ *A Manual of Diet in Health and Disease.* By THOMAS KING CHAMBERS, M. D., Oxon., F. R. C. P. Lond., etc. Published by Henry C. Lea, Philadelphia. 1875.

presentation and criticism of the kinds of food suited for the different ages and pursuits of man, though probably not new to the modern medical student, may yet be of practical benefit to the full-grown physician. The short physiological review of this part of his book is well done and agreeably presented to the reader.

The remarks of Dr. Chambers in reference to the choice of food are exceedingly sagacious, and should be widely promulgated; but unfortunately we civilized beings depend upon tradesmen for our meat, and physicians cannot, from the nature of society, become political economists.

We cannot expect those of our readers who are teetotalers to read with relish that portion of this book which refers to the use of wines; as for instance (page 76), "All these five classes of wines (strong dry wines, strong sweet wines, aromatic wines, acid wines, sparkling wines) prudence will reserve for festive purposes and occasions; the wise man who wishes to enjoy life will make them always exceptional, for as idlers have no holidays, so perpetual feasters miss all the pleasures of variety; but I am quite sure that the not infrequent manufacture of occasions for domestic rejoicings, a birthday, a wedding anniversary, . . . a horse sold, . . . the calving of a cow, . . . a daughter cutting her first tooth, . . . is a great promoter, not only of love and happiness, but of personal health. . . . If the beverages are good of their class, the moderate use will not shorten but both cheer and lengthen life."

The remarks on athletic training should be carefully read by boating men, and should be known to practitioners, especially those who are often appealed to by parents of college students. The explanation of the purposes of training is clearly stated and easily comprehended; the regimen of the principal English universities is transcribed, and a proper caution is given in regard to the abuse of training. In view of the present season it may not be amiss to call attention to what Dr. Chambers writes in reference to those who desire to spend a vacation in sport or mountaineering. He urges the use of the week or fortnight prior to the vacation in preparing the physical frame by a proper diet and muscular discipline, thus to prevent the wasting of the first week of the vacation in "getting into condition." The suggestions for the relief of unhealthy corpulence are excellent, as well as the caution in regard to the use of violent means for reducing the weight of the body. "Many uncomfortably stout persons are very active in mind and body, and really could not add to their muscular discipline without risk of injury."

The Hints for Health Travelers, Chapter VII. of the second part, are practical and seem sound in theory; but the criticism in regard to the selection from the bill of fare of the proper articles of food would be of little use to those who travel in our country.

The discussion on the relation of proper food for various climates, while the principles are thoroughly explained in the modern works on physiology, may perhaps be agreeable reading for those who do not own any of the latter.

The Diet and Regimen of Weak Digestion, Chapter III. of the third part, is especially noteworthy; but as Dr. Chambers has made his reputation as a writer upon this especial subject, it is unnecessary to criticise this portion of his work.

The manual is evidently intended for popular reading as well as for those persons who are strictly professional ; but yet, like all such books written for two classes of persons, there is much in it which is probably well-known to medical men, and a great deal in it which would mislead the world at large. The kinds of medicine, and their doses, which travelers should keep on hand are hardly safe for the uneducated to use except under the special direction of a medical attendant. It would probably be more advantageous for the traveler to consult his family physician, rather than this book, in regard to the proper medical articles to put into his trunk for use in an emergency. We invite attention to page 172 in reference to this subject.

Finally, the discussion on alcohol, commencing on page 200, would furnish good reading to those in favor, as well as those opposed to its use. We will not enlarge upon that subject here.

R. A.

VOGEL ON THE CHEMISTRY OF LIGHT AND PHOTOGRAPHY.¹

THE appearance of a popular treatise on the chemical principles of photography by so competent a person as Professor Vogel, is very seasonable at a time when the application of this art to scientific researches may be of great use in preserving accurately the observations of the student. Photographic representation must always be more accurate than that of the draughtsman. The well-known researches in dental histology by means of photo-micrographs by the late Dr. Hitchcock, suggest a means for extending the application of this art to other points of histology. To a person who desires to obtain a knowledge of the principles of the art of photography, we recommend the careful study of Dr. Vogel's work.

A REMARKABLE CASE OF CATALEPSY.

WE take from the *London Medical Record* the facts of the following interesting case, which has attracted much attention in Paris. The case of Louise Lateau has added greatly to the interest which such cases naturally present.

Marie Lecomte, who had come into Dr. Desprès's wards for a surgical affection, was soon afterwards attacked with dysmenorrhœa and uncontrollable vomitings, followed by nervous aphonia and suppression of urine, and vomiting. At the beginning of April the urinary function, which had long been suspended, was reëstablished, when on April 5th the patient fell into a lethargy ; her breathing was imperceptible, her lips were pink, and her complexion rather roseate than pale. The trunk and limbs were in a complete state

¹ *The Chemistry of Light and Photography.* By DR. HERMANN VOGEL, Professor in the Royal Industrial Academy of Berlin. International Scientific Series. New York : D. Appleton & Co.

of relaxation; the pulse was normal; involuntary motion was abolished; the finger placed through the half-opened mouth on the glottis provoked neither cough nor any other movement. No food was given for fear that any attempts to administer it would produce asphyxia. On April 6th, the whole of the patient's muscles were hard and tense. The state was that of cadaveric rigidity, *minus* death. This condition lasted six days, during which the patient took no food. Many attempts were made to awaken her by pricking, irritating the nostrils, etc., but without success. M. Desprès tried an experiment tending to show that the muscular contraction was involuntary. The abdominal muscles contracted like those of the rest of the body and retained the form imparted to them. By forcibly applying the hand to the abdomen the muscles were depressed, and the imprint of the hand remained visible during at least three minutes. Between the seventh and fourteenth days of the crisis there were brief intervals of partial awakening, when the patient would take a little food. From the latter date the cataleptic crisis ceased. The patient remained in a state of dreamy wakefulness—of somnambulism. She did not recognize any one, but was yet able to take drink. On the seventeenth day the patient believed herself to be blind, and a shining object placed before her eyes, and even the light of day, seemed to make no impression upon her; but sight returned the next day. On the twenty-fifth day vomiting had entirely ceased, and the patient was convalescent. On May 5th, she was entirely cured.

Cases of catalepsy complicated with somnambulism of hysterical patients are now well known. This kind of catalepsy is almost exclusively the melancholy privilege of women.

This patient, quite unlike Louise Lateau, had no religious excitement, and, on the other hand, no vicious habits. She is a foundling, twenty-four years old, who had never left the foundling hospital and the farm where she had been boarded out, and is a quiet, well-conducted unmarried woman. In her case the attack begins with lethargic coma, and generalized muscular contraction comes on twenty-four hours afterwards; when the patient awakes she is somnambulistic. The catalepsy, accompanied by lethargy, lasts six full days, during which there is apparent death. After the awakening there are three relapses, and the disorder yields little by little, after alternations of awakening and lethargy for several days.

Regarding the question whether it might not have been possible when she was in the lethargic state for ignorant persons to have believed death to be real and to have interred the patient, it is stated that notwithstanding the appearances of death in the case of Marie Lecomte, the signs of life were so decided that the most ignorant of practitioners could not have felt for an instant the slightest doubt as to the vitality of the patient.

GALLOPING MALIGNANT SYPHILIS.

THE presence of two patients in the wards of Saint Louis Hospital was the occasion of a clinical lecture on the above malady by Dr. E. Guibout, a full report of which, is contained in *L'Union Médicale* of May 25 and 27, 1875.

In contrast with the usual history of syphilis, the secondary and tertiary lesions slowly developing themselves, the two patients under consideration, only six weeks after the appearance of the chancre, were terribly disfigured, and rendered hideous and repulsive, by the enormous black and sanious crusts which covered the greater part of the scalp, face, trunk, and limbs. There were very numerous and very large ulcerations, and from beneath and across the crusts which covered them there flowed incessantly a disgusting mixture of pus and blood. The countenances were pale and thin, eyes lack-lustre, the lips dry, and there was the profound and indefinable expression characteristic of the disease. There was also intense fever, prostration, diminution of vital forces, loss of appetite and of sleep; in short, a general and very severe disturbance of all the physiological functions. In consideration of the phenomena presented by these cases, so different from those usually shown in syphilis, the titles *malignant* and *galloping* have been applied: *malignant*, because of the gravity of the cutaneous lesions and of the general condition of the patient; *galloping*, because of the rapidity of the invasion, development, and progress of the local and general lesions.

The form of syphilis under discussion may present itself at two different epochs. It is sometimes *precocious* (*précoce*) or *primitive*, sometimes *tardy* or *consecutive*. The precocious or primitive form occurs when it is the first of the general lesions of syphilis, when it succeeds, with scarcely any delay, the infecting chancre. Such was the form as it appeared in the two cases forming the subject for the lecture. Coming on only six weeks after the infecting chancre, and without the appearance of any other lesion of the skin, there were developed on the head, trunk, and limbs the ulcerations and the crusts of rupia of the gravest form, accompanied with excessive disturbance of the health.

At other times the form is *tardy* or *consecutive*. Suddenly, and with alarming characteristics, it supervenes at a late stage of the syphilitic career after the ordinary constitutional phenomena. There comes over the patient at the same time a change so rapid, profound, and marked that it is impossible not to see something serious is in store.

When we come to consider the cause of the invasion of malignant syphilis, it is found that the late form, that is, that which accompanies the ordinary early cutaneous lesions, or is consecutive to them, is due to the want of proper treatment, to bad hygiene, or to a deterioration of the general health of the patient in consequence of fatigue or of various excesses. The same causes hold good for the precocious, galloping, malignant syphilis. The primary manifestations of syphilis may be malignant if the patient's constitution is poor and his surroundings unfavorable to a healthy hygienic condition.

If the prognosis of syphilis in its most common and benign form is always unfavorable, much more so will it be in the malignant variety.

Its treatment presents great difficulties, and requires all that medical skill and clinical science can command. One needs to consider not only the disease, but even more, perhaps, the patient. Great caution is necessary about prescribing the specifics — mercury and iodide of potassium. Doubtless these remedies are indicated by the disease, but they are contra-indicated by the state of the patient. In an intensely febrile state, with 'gastro-intestinal troubles, they would not be tolerated; they would only aggravate the accidents. Above all, the patient must be placed in the best hygienic conditions possible. He should have as much sunlight and out-of-door life as he can endure, and the temperature will admit of, together with tonics, opiates, and a generous diet. Later, for the ulcerations and tertiary lesions, the specifics in small doses may be employed.

INFANT MORTALITY IN FRANCE.

IN view of the excessive mortality among infants in France, *Le Bulletin Français*, as we learn from *L'Union Médicale*, calls attention to a plan which has in view a diminution of the extraordinary death-rate among the little ones. It is stated that among 100 individuals in France there are reckoned only 2.55 births, while in Russia there are 4.77. The other countries offer intermediate proportions: 100 marriages in Prussia give 460 infants; in France only 300. The annual excess of births over deaths calculated for a million inhabitants, is in Norway and Prussia about 14,000; in Prussia and Sweden, about 12,000; in Spain and Portugal, 8500; in France, only 2400. It appears from such statistics that the population of France would double in 170 years, while 42 years would suffice for Prussia, 52 for England, and 66 for Russia. Nor do these figures tell the whole story, for a frightful mortality has been discovered in France among the very young. According to M. Brochard, 100,000 nurslings annually die from starvation and misery. It is interesting to observe that the mortality varies with the department from 13 to 40 in 100, and still more interesting to study the enormous variations in the different categories of infants. While infants who are nursed by their mothers or by wet-nurses at their homes die during the first year in the proportion of 8 or 10 in 100, those who are placed away from home under the care of hospital administration and municipal direction give a mortality of from 30 to 36 in 100, and those who are intrusted to nurses in the provinces show the enormous mortality of from 50 to 70 in 100.

With the design of developing maternal nursing, and of caring for the nursling when he has to be removed from the family, there has been instituted the Protective Society of Infancy. There is, besides, the law proposed by M. Roussel for the protection of infants of a tender age, particularly of nurslings.

In a great city like Paris, where there are many families in which the mother cannot nurse her infant, nor bear the expense of a wet-nurse, there is the alternative of the nurse-bottle or of sending the child into the country. It is found that the more the latter plan is avoided, the better the chance of preserving the life of the little one. The question as to whether artificial nour-

ishment can be recommended may be answered in two ways. In Paris, where milk is adulterated and never fresh, it needs to be boiled before being given to the infant, and it is very difficult to find in such a preparation elements of nutrition suitable for the delicate organs of the new-born. But when different conditions obtain, the results of artificial nourishment are much more favorable, as in the country, where the animals can be milked several times a day. It is proposed to establish some farm-nurseries in the many favorable localities which abound near Paris. A mansion isolated in the country in the midst of gardens or woods, with milch cows specially kept for the purpose, the alimentation of the infants regulated and supervised by competent physicians — such a plan, it is hoped, will help to preserve many lives. The dangers of overcrowding are to be obviated by having separate pavilions and a limited number to each. No doubt is entertained that good results would follow such favorable conditions.

MEDICAL NOTES.

— The annual meeting of the New Hampshire Medical Society took place on June 15th. There was a large attendance of members, and Maine, Massachusetts, Rhode Island, New York, and New Jersey were represented by delegates. At noon the president, Dr. Wight, delivered an address on the duties of the profession. Professor O. B. Crosby followed with a paper on removal of the arm, scapula, and clavicle, which he claimed New Hampshire surgeons (Dixie Crosby, R. D. Muggey and Amos Twitchell, in the order mentioned) had been the first to perform. Then came a report on gynæcology, and sanitary measures in the rural districts, by Dr. Wilkins, of Manchester, and Dr. Child, of Bath; also a report on cerebro-spinal meningitis, by Dr. Fowler, of Bristol; and another, on splints, by Dr. Hersey, of Manchester, in which he paid a handsome compliment to Dr. Cotting, president of the Massachusetts Society, as having contributed a splint which could be easily made in a few moments by a surgeon, and one that was effective in its application.

The society adjourned on the next day, after the election of the following officers: —

President, S. M. Whipple, New London; Vice-President, A. B. Crosby, Hanover; Secretary, Granville P. Conn, Concord; Treasurer, Thomas Wheat, Manchester; Council, J. W. Barney, S. B. Carbee, G. I. Cutler, F. W. Graves, W. W. Wilkins, John R. Ham, W. B. Moody, Hiram Palmer, S. G. Dearborn, D. S. Clark; Committee on Surgery, John W. Parsons, Portsmouth; Practice of Medicine, Wm. Child, Bath; Necrology, Wm. G. Carter, Concord; Gynæcology, T. J. W. Pray, Dover; Anniversary Chairman, Dr. J. C. Eastman, Hampstead.

— The cholera discussion has been revived in Paris in a decidedly dramatic manner. At a recent meeting of the Academy of Medicine, one of the secretaries read a paper by M. Tholozan, the physician of the king of Persia. He

held that epidemics are not necessarily of Indian origin, but may occur spontaneously. According to a correspondent of the *British Medical Journal*, this gave rise to a warm discussion and Tholozan's views were opposed by MM. Chauffard, Briquet, Fauvel, Bouley, Bouillard, and others, who were of course arrayed against M. Tholozan, and condemned his doctrine as not being able to bear criticism, at least as far as concerns the origin of cholera; they however gave him the credit of having demonstrated in a most lucid manner that extinct epidemics are capable of being revived, and thus constituting the starting-point of a severe or extensive epidemic. Following in his own line of argument, he further stated, in his letter, that the cholera of 1862, which raged all over Europe, far from being the offspring of any previous epidemic, broke out spontaneously, and that this being the case, it follows as a necessary consequence that the prophylactic measures employed to keep off an invasion of Indian cholera are perfectly useless. M. Bouley loudly protested against these doctrines, and pointed out the danger of giving them any countenance.

— Dr. Bullard, of New Haven, Conn., as we learn from the *Medical Record*, has been in practice for about a half a century, during which he has been present at the births of about one thousand children. Such of these children as survive propose to have a grand picnic at the doctor's residence, and the whole affair is to be under a committee of arrangements from the adjoining towns.

COMPARATIVE MORTALITY-RATES.

MESSRS. EDITORS, — In connection with the article on this subject on page 577 of the last volume, it is interesting to compare the mortality report for certain cities in the United States for the year 1874. The only city which appears in the formal list of May 13th which does not appear in Dr. Folsom's report, is Salem, Massachusetts. Taking the whole thirteen, and giving Salem the position it would hold, the two lists will read as follows: —

Dr. Draper's List for Thirteen Weeks.	Deaths to 1000 Living.	Dr. Folsom's List for One Year — 1874.	Deaths to 1000 Living.
1. New York.....	30.545	1. New York.....	27.61
2. Cambridge.....	30.538	2. Fall River.....	26.75
3. Brooklyn.....	26.363	3. Cambridge.....	24.56
4. Lynn.....	25.538	4. Brooklyn.....	24.46
5. Fall River.....	25.461	5. Lowell.....	24.12
6. Boston.....	25.230	6. Boston.....	23.60
7. Philadelphia.....	23.615	7. Lawrence.....	23.45
8. Lawrence.....	21.923	8. Worcester.....	20.46
9. Salem.....	21.076	9. Lynn.....	20.43
10. Providence.....	20.175	10. Providence.....	19.86
11. Lowell.....	19.468	11. Philadelphia.....	19.54
12. Worcester.....	18.846	12. Salem.....	19.
13. Springfield.....	11.	13. Springfield.....	18.33

If we put away the names of all cities out of Massachusetts, the following will be the record:—

Dr. Draper's List for Thirteen Weeks.	Deaths to 1000 Living.	Dr. Folsom's List for 1874.	Deaths to 1000 Living.
1. Cambridge	30.538	1. Fall River.....	26.75
2. Lynn	25.538	2. Cambridge	24.56
3. Fall River	25.461	3. Lowell	24.12
4. Boston	25.230	4. Boston	23.60
5. Lawrence	21.923	5. Lawrence	23.45
6. Salem	21.076	6. Worcester	20.46
7. Lowell	19.468	7. Lynn	20.45
8. Worcester	18.846	8. Salem	19.
9. Springfield.....	11.	9. Springfield	18.33

Of course a single year's record is of comparatively little consequence. As an evidence of this, we find that the average age at death in one town in the State was over ninety years, and in another it was less than a week. In the former there was but one death, in the other there were two, apparently twins. But the record is worth looking at as a means of finding out, first, if city and town registrars do their duty; and secondly, the cities and towns with large mortality lists may be reminded to find out why their death-rates are large in any year; and to see that men shall not be allowed to build on swamps and marshes, as has been done on both sides of Charles River. Boards of health should have increased rather than diminished power given to them, and our death-rates should be brought as low at least as the death-rates of London. Men should not be permitted to put up blocks of house, where there is nothing but moth and rust to corrupt, and where thieves would be cheated if they tried to break in and steal.

WOUND OF THE KNEE-JOINT.

EDITORS OF THE BOSTON MEDICAL AND SURGICAL JOURNAL,—On page 82, Volume XLVII. of the JOURNAL, is an article on the method of fixing loose bodies in the knee-joint, and observations on operations for their removal, the closing paragraph of which is as follows:—

“Position of the limb after the operation may be of even more importance than the mode of operating. It should be such as will favor union by the first intention of the wound in the synovial capsule. As the incision is made in the direction of the limb, the extended position usually recommended must tend to separate the edges of the wound, whereas the partially flexed position will naturally close the wound and protect the synovial cavity from foreign invasion.”

A recent case of accidental wound has given me an opportunity to confirm the statement there made, and shows the impunity with which air and blood

may be admitted to the joint, provided they are subsequently expelled by position.

April 19th, J. P., sixteen years of age, healthy and of correct habits, while chopping in the woods cut a gash in his right knee. Without stopping to ascertain the degree of injury he ran and walked a quarter of a mile to the house of his employer, and thence rode three miles to my office.

The wound was then free from hæmorrhage. It was in the direction of the limb, half an inch inside of the patella, and three inches long. The leg being nearly extended, when he uncovered the wound there was wide gaping of it, and free exposure of the polished surface of the cartilaginous covering of the inner condyle. On flexing the leg, bubbles of air and bloody synovia gushed out, and the edges of the wound in the synovial capsule came in perfect apposition as soon as the leg was at a right angle with the thigh. Two sutures were taken in the external wound, and adhesive straps, lint, and bandage applied. A rectangular splint, having a screw for extension, was strapped on the posterior aspect of the leg and thigh. The wound was not touched for six days, when the upper suture was removed and the leg slightly extended. In three days more the other suture was taken out, the straps and lint remaining intact. There was no contingent discharge, and no inflammation other than that necessary to heal the wound. No medicine was given, but abstinence from animal food was observed, with rest.

May 29th. He has walked more or less since the 11th inst., and to-day came to my office. There is a little excess of fluid in the joint, for which rubber webbing is applied, there being no soreness nor any indication of inflammation. At the time of writing the patient has been at work for the past two weeks, quite recovered.

EZRA BARTLETT.

EXETER, N. H., June 24, 1875.

LETTER FROM WATERVILLE, MAINE.

MESSRS. EDITORS, — During the present spring there have occurred here some half a dozen cases of mumps followed by inflamed testicles, and three or four followed by inflamed mammae. Dr. Flint, in the last edition of his text-book, would have it that these are very rare complications, nor can I in any of the text-books at my command find any adequate account of them.

All these cases recovered, and the text-books speak of the complication as a trifling one. But I would like to make the following inquiries through your columns: —

- 1st. Is an inflamed testis or mamma, accompanying or following mumps, always a trifling affection?
- 2d. Does it rarely occur?
- 3d. What facts are there bearing upon its causation?
- 4th. The proper mode of treatment?

Should you care to insert the above in some future number of the JOURNAL, you will greatly oblige

Yours truly,

FRED. M. WILSON.

WATERVILLE, ME., May 24, 1875.

WEEKLY BULLETIN OF PREVALENT DISEASES.

THE following is a bulletin of the diseases prevalent in Massachusetts during the week ending June 26, 1875, compiled under the authority of the State Board of Health from reports received from physicians representing all sections of the State:—

In Berkshire, whooping-cough has a local prevalence, but in general the health of the people is satisfactory.

In the Connecticut Valley, subacute rheumatism, mild bronchitis, and pneumonia are the prevalent affections. Small-pox continues in Huntington, but there are no new cases of that disease.

In Worcester County, rheumatism, diphtheria, and bronchitis prevail.

In the Northeastern counties, rheumatism, measles, and bronchitis are present, but there is a marked decline in these and in all the acute diseases, as compared with those reported last week. Sherborn reports "German measles."

In the Metropolitan section, scarlatina, pneumonia, bronchitis, and diarrhoea prevail, but in diminishing amount. Diphtheria continues in Brighton and in Boston, and it is also in Newton.

In the Southeastern counties, mild rheumatism, pneumonia, typhoid fever, and measles are prevalent. Hyannis reports "German measles."

Scarlatina is most prevalent in Boston; diphtheria in Worcester County.

F. W. DRAPER, M. D., Registrar.

COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING JUNE 19, 1875.

	Estimated Population.	Total Mortality for the Week.	Annual Death-rate per 1000 during Week.
New York	1,040,000	489	24
Philadelphia	775,000	318	21
Brooklyn	450,000	178	21
Boston	350,000	138	21
Providence	100,000	15	8
Worcester	50,000	18	19
Lowell	50,000	15	16
Cambridge	44,000	14	16
Fall River	45,000	10	12
Lawrence	33,000	15	24
Springfield	33,000	11	17
Lynn	28,000	10	19
Salem	26,000	12	24

GRADUATES FROM THE HARVARD MEDICAL SCHOOL.—The following is the list of graduates from the Harvard Medical School at the annual commencement, June 30, 1875, with the titles of their theses:—

- Henry Withington Bradford. Vesical Calculi, and the different methods of their disposal.
 John Henry Burchmore. Uterine Hæmorrhage.
 Robert Marsh Carleton, A. B. Pyæmia, etiology, symptoms, and treatment.
 Jonas Clark, Jr. Vesical Calculi, diagnosis and treatment.
 James Madison DeWolf. Drugs, proper and improper uses.
 William Aloysius Dunn. The Health of Cities.
 Walter Ela, A. B. The Patella, its structure and affections.
 James Anthony Finn, A. M. Suppurative Pleuritis, or so-called Empyema.
 James Aloysius Fleming. Injuries of the Head.
 Justus Crosby French. Hypodermic Medication.
 William Henry French, A. B. Vomiting.
 Edwin Fisher Gardner. Digitalis.
 Almon Debois Gay. Rachitis.
 Samuel Howe, A. B. Milk Fever.
 Alexander Rankin Hutchison. The three Functions of the Liver.
 Claudius Marcellus Jones, A. M. Bloodletting.
 Alexander Bloomfield Lawrence. Pneumatic Aspiration in Retention of Urine.
 Bennett Sperry Lewis. Typhus Fever.
 Robert Pearmain Loring. Puerperal Convulsions.
 Phillips Adams Lovering, A. B. Neglected Felon.
 Charles Lemuel Nichols, A. B. Posterior Spinal Sclerosis.
 George Chesley McClean. Placenta Prævia.
 Charles Edward McGowan. Vegetable Parasites of the Human Skin.
 George Edward Mecuen. Ununited Fracture and False Joint.
 Wilbur Fisk Sanborn. Diphtheria.
 George Stedman, A. B. Hip Disease.
 Henry Rust Stedman. Broncho-Pulmonary Hæmorrhage.
 Jonathan Merle Teele, A. B. Diphtheria.
 William Fiske Whitney, A. B. Empyema.
 Fred Morse Wilson, A. B. Some things about Tubercle.

PAMPHLETS RECEIVED.—A Clinical Contribution to the Treatment of Tubal Pregnancy. By T. Gaillard Thomas, M. D. (Reprinted from the New York Medical Journal.) 1875. Pages 11.

Annual Catalogue of Albany Medical College. 1875. Pages 16.

Transactions of the Ninth Annual Meeting of the Medical Association of Missouri. 1875. Pages 81.

Clinical Studies with the Non-Nauseating Use of Ipecacuanha. By A. A. Woodhull, M. D. (Reprinted from Atlanta Medical and Surgical Journal.)

Dictionnaire Annuel des Progrès des Sciences et Institutions Médicales. Par Mons. P. Garner, Dixième Année, 1874. Paris: Ballière. 1875.

Popular Resorts and How to Reach them. By John B. Bachelder. Boston: John B. Bachelder, publisher. 1875. Pages 361.

On the Use of Warm and Hot Water in Surgery. By Frank H. Hamilton. New York: G. P. Putnam's Sons. 1875. Pages 6.